

AMENDMENT TO THE CLAIMS

Please amend the claims as follows:

Claim 1 (withdrawn): An antifouling detergent comprising a polymer which comprises

a monomer unit A having at least one substituent selected from the group consisting of amino groups and quaternary ammonium groups and

a monomer unit B represented by  $-\text{SO}_2-$ , and a monomer unit C derived from a monomer selected from the following group:

(i) an anionic group-containing compound selected from acrylic acid or salts thereof, methacrylic acid or salts thereof, maleic acid or salts thereof, maleic anhydride, styrene sulfonate, 2-acrylamido-2-methylpropanesulfonate, allyl sulfonate, vinyl sulfonate, methallyl sulfonate, sulfopropyl methacrylate, and mono- $\omega$ -methacryloyloxyalkyl(C1 to 12) phosphate,

(ii) an amide group-containing compound selected from acryl(or methacryl)amide, N,N-dimethylaminopropylacryl(or methacryl)amide, N,N-dimethylacryl(or methacryl)amide, N,N-dimethylaminoethylacryl(or methacryl)amide, N,N-dimethylaminomethylacryl(or methacryl)amide, N-vinyl-2-caprolactam, and N-vinyl-2-pyrrolidone,

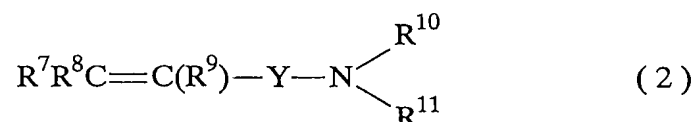
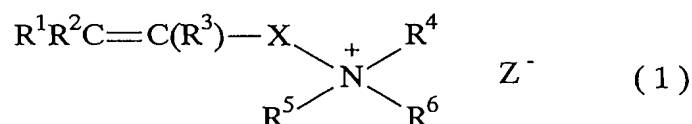
(iii) an ester group-containing compound selected from alkyl(C1 to C5) acrylate(or methacrylate), 2-hydroxyethyl acrylate(or methacrylate), N,N-dimethylaminoalkyl(C1 to 5) acrylate(or methacrylate), and vinyl acetate, and

(iv) an olefinic compound selected from ethylene, propylene, n-butylene, isobutylene, n-pentene, isoprene, 2-methyl-1-butene, n-hexene, 2-methyl-1-pentene, 3-methyl-1-pentene, 4-methyl-1-pentene, 2-ethyl-1-butene, styrene, vinyl toluene and  $\alpha$ -methylstyrene

wherein the content of the monomer unit A in the whole monomer units is 10 to 99 mol-% wherein

the molar ratio of the monomer unit B to the monomer unit A is from 0.01 to 1.

Claim 2 (Withdrawn): The antifouling detergent according to claim 1, wherein the monomer unit A is selected from a compound represented by the general formula (1) and/or a compound represented by the general formula (2):



wherein  $\text{R}^1$ ,  $\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^7$ ,  $\text{R}^8$  and  $\text{R}^9$  each represent a hydrogen atom, a hydroxyl group or a  $\text{C}_{1-3}$  alkyl group;

X and Y are independently selected from the group consisting of a  $\text{C}_{1-12}$  alkylene group,  $-\text{COOR}^{12}-$ ,  $-\text{CONHR}^{12}-$ ,  $-\text{OCOR}^{12}-$  and  $-\text{R}^{13}-\text{OCO}-\text{R}^{12}-$  wherein  $\text{R}^{12}$  and  $\text{R}^{13}$  each represent a  $\text{C}_{1-5}$  alkylene group;

$\text{R}^4$  represents a  $\text{C}_{1-3}$  alkyl group, a  $\text{C}_{1-3}$  hydroxyalkyl group or  $\text{R}^1\text{R}^2\text{C}=\text{C}(\text{R}^3)-\text{X}-$ ;

$\text{R}^5$  represents a  $\text{C}_{1-3}$  alkyl group, a  $\text{C}_{1-3}$  hydroxyalkyl group or a benzyl group;

$\text{R}^6$  represents a  $\text{C}_{1-10}$  alkyl group optionally substituted with a hydroxy group, a carboxyl group, a sulfonate group, a sulfate group or a benzyl group, wherein when  $\text{R}^6$  comprises an alkyl group, a hydroxyalkyl group or a benzyl group,  $\text{Z}^-$  represents an anion and when  $\text{R}^6$  comprises a carboxyl group, a sulfonate group and a sulfate group,  $\text{Z}^-$  is absent, but  $\text{R}^6$  are anions;

$\text{R}^{10}$  represents a hydrogen atom, a  $\text{C}_{1-3}$  alkyl group, a  $\text{C}_{1-3}$  hydroxyalkyl group or  $\text{R}^7\text{R}^8\text{C}=\text{C}(\text{R}^9)-\text{Y}-$ ; and

$\text{R}^{11}$  represents a hydrogen atom, a  $\text{C}_{1-3}$  alkyl or a  $\text{C}_{1-3}$  hydroxyalkyl group.

Claim 3 (withdrawn): An antifouling detergent composition comprising the antifouling detergent as claimed in claim 1 and a surfactant.

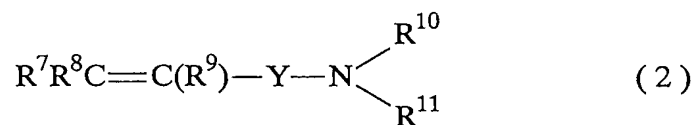
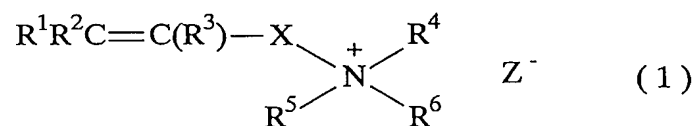
Claim 4 (withdrawn): The antifouling detergent composition according to claim 3, wherein the surfactant is a cationic surfactant.

Claims 5-7 (canceled):

Claim 8 (currently amended): A method of treating a hard surface comprising treating a hard surface with an antifouling detergent composition comprising an antifouling detergent and a cationic surfactant, wherein said antifouling detergent comprises a polymer which comprises

a monomer unit A

derived from a compound represented by the general formula (1) and/or a compound represented by the general formula (2):



wherein  $\text{R}^1$ ,  $\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^7$ ,  $\text{R}^8$  and  $\text{R}^9$  each represent a hydrogen atom, a hydroxyl group or a  $\text{C}_{1-3}$  alkyl group;

X and Y are independently selected from the group consisting of a C<sub>1-12</sub> alkylene group, -COOR<sup>12</sup>-, -CONHR<sup>12</sup>-, -OCOR<sup>12</sup>- and -R<sup>13</sup>-OCO-R<sup>12</sup>- wherein R<sup>12</sup> and R<sup>13</sup> each represent a C<sub>1-5</sub> alkylene group;

R<sup>4</sup> represents a C<sub>1-3</sub> alkyl group, a C<sub>1-3</sub> hydroxyalkyl group or R<sup>1</sup>R<sup>2</sup>C=C(R<sup>3</sup>)-X-;

R<sup>5</sup> represents a C<sub>1-3</sub> alkyl group, a C<sub>1-3</sub> hydroxyalkyl group or a benzyl group;

R<sup>6</sup> represents a C<sub>1-10</sub> alkyl group optionally substituted with a hydroxy group, a carboxyl group, a sulfonate group, a sulfate group or a benzyl group, wherein when R<sup>6</sup> comprises an alkyl group, a hydroxyalkyl group or a benzyl group, Z<sup>-</sup> represents an anion and when R<sup>6</sup> comprises a carboxyl group, a sulfonate group and a sulfate group, Z<sup>-</sup> is absent, but R<sup>6</sup> are anions;

R<sup>10</sup> represents a hydrogen atom, a C<sub>1-3</sub> alkyl group, a C<sub>1-3</sub> hydroxyalkyl group or R<sup>7</sup>R<sup>8</sup>C=C(R<sup>9</sup>)-Y-; and

R<sup>11</sup> represents a hydrogen atom, a C<sub>1-3</sub> alkyl or a C<sub>1-3</sub> hydroxyalkyl group and a monomer unit B represented by -SO<sub>2</sub>-, and

a monomer unit C derived from a at least one monomer selected from the following group:

~~(i) an anionic group containing compound selected from~~ consisting of acrylic acid or salts thereof, methacrylic acid or salts thereof, maleic acid or salts thereof, maleic anhydride, styrene sulfonate, 2-acrylamido-2-methylpropanesulfonate, allyl sulfonate, vinyl sulfonate, methallyl sulfonate, sulfopropyl methacrylate, and mono- $\omega$ -methacryloyloxyalkyl(C1 to 12) phosphate;

~~(ii) an amide group containing compound selected from acryl(or methacryl)amide, N,N-dimethylaminopropylacryl(or methacryl)amide, N,N-dimethylacryl(or methacryl)amide, N,N-dimethylaminoethylacryl(or methacryl)amide, N,N-dimethylaminomethylacryl(or methacryl)amide, N-vinyl-2-caprolactam, and N-vinyl-2-pyrrolidone,~~

~~(iii) an ester group containing compound selected from alkyl(C1 to C5) acrylate(or methacrylate), 2-hydroxyethyl acrylate(or methacrylate), N,N-dimethylaminoalkyl(C1 to 5) acrylate(or methacrylate), and vinyl acetate, and~~

~~(iv) an olefinic compound selected from ethylene, propylene, n-butylene, isobutylene, n-pentene, isoprene, 2-methyl-1-butene, n-hexene, 2-methyl-1-pentene, 3-methyl-1-pentene, 4-methyl-1-pentene, 2-ethyl-1-butene, styrene, vinyl toluene and  $\alpha$ -methylstyrene~~

wherein the content of the monomer unit A in the whole monomer units is 30 to ~~99~~ 90 mol-% wherein

the molar ratio of the monomer unit B to the monomer unit A is from 0.01 to 1,

the molar ratio of the monomer unit C to the monomer unit A is from 0.05 to 1 and

wherein the surface comprises the surface of a toilet bowl.

Claim 9 (canceled):

Claim 10 (currently amended) ~~the~~ The method of claim 8, wherein ~~said a~~  
concentration of said polymer is 0.01 to 35 mass percent.

Claim 11 (previously presented) The method of claim 8, wherein said antifouling detergent composition is a liquid.

Claim 12 (new) The method of claim 8, wherein said surface of a toilet bowl is a glazed surface.

Claim 13 (new) The method of claim 8, wherein monomer (C) further comprises at least one monomer selected from the group consisting of

(ii) an amide group-containing compound selected from acryl(or methacryl)amide, N,N-dimethylaminopropylacryl(or methacryl)amide, N,N-dimethylacryl(or methacryl)amide, N,N-dimethylaminoethylacryl(or methacryl)amide, N,N-dimethylaminomethylacryl(or methacryl)amide, N-vinyl-2-caprolactam, and N-vinyl-2-pyrrolidone,

(iii) an ester group-containing compound selected from alkyl(C1 to C5) acrylate(or methacrylate), 2-hydroxyethyl acrylate(or methacrylate), N,N-dimethylaminoalkyl(C1 to 5) acrylate(or methacrylate), and vinyl acetate, and

(iv) an olefinic compound selected from ethylene, propylene, n-butylene, isobutylene, n-pentene, isoprene, 2-methyl-1-butene, n-hexene, 2-methyl-1-pentene, 3-methyl-1-pentene, 4-methyl-1-pentene, 2-ethyl-1-butene, styrene, vinyl toluene and  $\alpha$ -methylstyrene.